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TITLE : IRON AND PHOSPHORUS ELECTROPLATING BATH

ABSTRACT : PROBLEM TO BE SOLVED: To obtain a plating film excellent in resistance to seizure and wear by adding a specified amt. of dodecyl sulfate to an iron and phosphorus electroplating bath contg. iron(II) ion and hypophosphorous acid or its salt.

SOLUTION: Dodecyl sulfate is added by $\geq 0.5\text{g/l}$, preferably $0.5\text{--}1\text{g/l}$, to an iron and phosphorus electroplating bath contg. $20\text{--}80\text{g/l}$ iron(II) ion using ferrous sulfate, etc., as its source, $0.05\text{--}20\text{g/l}$ water-soluble phosphorus source of hypophosphorous acid and/or hypophosphite and further contg., as required, $0\text{--}200\text{g/l}$ ammonium sulfate as a conductive salt, $0\text{--}60\text{g/l}$ boric acid, etc., as a pH buffer and $0\text{--}200\text{g/l}$ ammonium bifluoride as a complexing agent. The water-soluble salts of Na, K, Li, etc., are used as the surfactant dodecyl sulfate. The plating soln. is preferably controlled to pH $0\text{--}3.5$, and plating is preferably conducted in this bath at room temp. to 80°C and at $\geq 0.5\text{A/dm}^2$ current density.

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